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Journal of the Society of Arts.

FRIDAY, SEPTEMBER 26, 1862.

INTERNATIONAL EXHIBITION OF 1862.

REPORTS OF THE JURIES.

The Council of the Society of Arts have felt the importance of having some permanent and authoritative Record of the International Exhibition, and finding that Her Majesty's Commissioners have provided only for the publication of the awards of the Juries, but not of their Reports descriptive of the Progress of Industry since the Exhibition of 1851, the Council have undertaken this work, with the co-operation of Her Majesty's Commissioners and of the Juries, and have placed the matter in charge of Dr. Lyon Playfair, the Special Commissioner of the Juries.

The Reports will be published in super royal octavo, to range with the one-volume Jury Reports of 1851. The price of the volume, bound in cloth, to Members of the Society of Arts, to Jurors, and Guarantors, is fixed at 10s. ; to other persons, 15s. If bound in morocco, 7s. 6d. additional in each case.

Forms of application for copies have been issued to Members of the Society, to Jurors, and to Guarantors.

It was the intention of the Council to issue the volume complete in the early part of the present month, but as several of the Reports have not yet been received by Her Majesty's Commissioners, the completion of the entire work has been unexpectedly delayed; the Council, however, unwilling to defer the publication of the Reports already completed, have determined to issue to the subscribers those that have been received up to the present time. When all the Reports are delivered, the parts now about to be issued to subscribers will be exchanged, if uninjured, for the perfect volume, bound or unbound, as desired.

It is expected that the first portion of the reports will be issued to subscribers by the end of this week.

CONVERSAZIONE.

The third Conversazione of the present season will take place at the South Kensington Museum on the 8th October. The cards of invitation have been issued this day.

INTERNATIONAL EXHIBITION OF 1862.—VISITS OF SCHOOLS.

The following is a continuation of the Schools reported to Her Majesty's Commissioners as having entered the Building, from 15th to 18th September, 1862 :—

DATE.	FROM WHAT LOCALITY.	NAME OF SCHOOL.	BY WHOM SENT.	No. of Children from each School.	Total each day.
Sept. 15	Belper, Derbyshire ...	Unitarian Sunday ...	Superintendent...	50	80
" "	Duffield, do. ...	Church Sunday ...	R. Jeffcock, Esq. ...	30	
" 16	Godstone ...	Choir... ..	Rev. J. S. Hoare ...	27	218
" "	Hoddesdon ...	Grammar ...	W. Lupton, Esq. ...	18	
" "	Ramsgate ...	Choir... ..	Rev. J. H. Davies ...	27	
" "	Salisbury ...	National ...	Mrs. Fowler ...	28	
" "	Kingsbury... ..	Parochial ...	Subscription ...	24	
" "	Hatton-garden ...	St. Andrew's ...	Committee ...	45	
" "	Ramsgate ...	St. George's ...	Subscription ...	29	
" "	City of London...	Aldersgate Ward ...	Rev. W. F. C. Webber ...	20	
" 17	West Smithfield ...	St. Bartholomew's ...	Rev. J. Abbiss ...	6	
" "	Brighton ...	Christ Church ...	Rev. J. Vaughan ...	30	
" "	Egham ...	Free ...	Rev. G. Taylor...	14	778
" "	Hammersmith ...	Sunday ...	Jas. Anstey Wild, Esq. ...	102	
" "	Finbury ...	St. Alphage ...	Committee ...	15	
" "	Wandsworth ...	Royal Patriotic... ..	Committee ...	64	
" "	Cornhill ...	Lime-street Ward ...	Subscription ...	80	
" "	Ratcliff ...	Cooper's Grammar ...	Cooper's Company ...	200	
" "	Stepney ...	Stepney Union ..	Subscription ...	59	
" "	Westminster ...	Wesleyan Training ...	J. R. Kay, Esq. ...	35	
" "	St. Paul's Cray, Kent	National ...	Rev. J. Langdon, and } Richd. Peterson, Esqs. }	37	
" "	Wanstead ...	Infant Orphan ...	Subscription ...	12	
" "	Yorkshire ...	Caterick Academy ...	Dr. Pollock ...	30	
" "	Titchbourn-street	St. John's Orphan ...	— Barker, Esq. ...	8	
" "	Stevenage, Herts.	National ...	J. Bailey Denton, Esq. ...	29	
" "	Farringdon-street	British ...	Committee ...	12	
" "	St. John's-wood	Catholic Industrial ..	Hon. and Rev. G. Talbot..	14	
" "	Paddington ...	Ragged ...	Subscription ...	24	
" "	Deal ...	St. Andrew's Choir ...	Rev. M. E. Benson ...	7	

RETURN OF SCHOOLS (*Continued*).

DATE.	FROM WHAT LOCALITY.	NAME OF SCHOOL.	BY WHOM SENT.	No. of Children from each School.	Total each day.
Sept. 18	City of London...	Aldersgate Ward	Rev. W. C. F. Webber ...	20	1,041
" "	St. Alban's	St. Stephen's Choir	G. Nicholas, Esq.	20	
" "	Uxbridge	Commercial	Thos. Kempton, Esq. ...	30	
" "	St. Ann's, Soho... ..	Parochial	Subscription	52	
" "	St. Clement's Dane ...	St. Clement's	Mr. Neal	87	
" "	Haskett, Newmarket..	Hawbeck	R. Porter Esq.	18	
" "	Wymering, Ports- mouth	National	Rev. G. Nugee... ..	48	
" "	St. Matthew's, City- road... ..	National	Subscription	90	
" "	Tower-hill	St. Botolph, Aldgate ...	Subscription	47	
" "	Hatwell	National	Subscription	90	
" "	Yorkshire	Caterick Academy	Dr. Pollock	30	
" "	Knightsbridge	All Saints	Subscription	54	
" "	Haverstock-hill... ..	Orphan	Subscription	290	
" "	Clapham-rise	British Orphan Asylum ...	J. K. Welsh, Esq.	134	
" "	North Brixton-road ...	Christ Church Industrial ...	Rev. J. McHenry	13	
" "	Wantage (Bucks) ...	Choir... ..	Rev. T. Bowles	18	

VISITS OF WORKMEN.

The following is a continuation of the return of the number of workmen, mechanics, operatives, and others who have visited the building from 16th to 18th September, 1862 :—

DATE.	DESCRIPTION OF PERSONS.	FROM WHAT LOCALITY.	BY WHOM SENT.	NUMBER.
Sept. 15	Labourers	Westham	J. Scully, Esq.	25
" "	Mechanics and Labourers	{ Iron Works, Swan Vil- lage, Staffordshire. }	John and Samuel Roberts ...	350
" "	Farm Labourers	Stoke and Hoo (Kent) ...	{ Thos. H. Day, Esq., Mr. W. S. Meers	80
" "	Canvas Weavers	Doncaster	C. J. Fox, Esq.	35
" "	Marble Masons... ..	Warren-st., Fitzroy-square.	A. Boucneau, Esq.	12
" "	Pensioners... ..	Chelsea Hospital	The Commissioners	51
" 16	Cutlers	Sheffield	Rodgers and Son	500
" "	Parishioners	{ Woodford, Northamp- tonshire	Rev. C. Smyth	17
" "	Agricultural Labourers	Hornsby, Cambridgeshire .	Messrs. Banyard & Saunders .	44
" "	Agricultural Implement Makers ...	Leiston Works, Suffolk ...	Messrs. Garratt	700
" "	Agricultural Labourers	Petistree, Suffolk	W. Walker, Esq.... ..	21
" "	Agricultural Labourers	Hacheston, Suffolk	L. W. Thurlow, Esq.	24
" "	Agricultural Labourers	Iken, Suffolk	J. W. Gobbett, Esq.	20
" "	Pensioners... ..	Chelsea Hospital	The Commissioners	50
" "	Agricultural Labourers	Bricket-wood, St. Albans...	R. Harrison, Esq.... ..	34
" "	Farm Labourers	Woodbridge, Suffolk	H. Edwards, Esq.	23
" "	Farm Labourers	Coalend, Southampton ...	A. R. Drummond, Esq. ...	100
" "	Villagers	Histin and Trumpington...	Individual Subscription ...	112
" "	Inmates of Workhouse	St. George's, Hanover-sq..	Committee	32
" 17	Brewers' Servants	Chiswick	H. Sich and Co.	35
" "	Garden Labourers	Beeston (Beds)	Mr. Marshall	14
" "	Workmen	Barking, Essex	J. B. Lewis, Esq.... ..	35
" "	Garden Labourers	Chelsea Hospital	Sir A. Woodford	18
" "	Members of Mechanics' Institute ...	Richmond, Yorkshire ...	E. Wood, Esq., F.G.S. .	60
" "	Brewers	Writtle, Essex	— Hardcastle, Esq.	44
" "	Agricultural Labourers	Hamondsworth... ..	R. A. Stevens, Esq.	26
" "	Chain Makers	Dudley	J. G. Walker, Esq.	30
" "	Mechanics	Bristol	{ Messrs. Hurndall, Hallier, and Wills	26
" "	Gas Work Operatives	Bath	The Directors	20
" "	Marble Work Apprentices	Westminster	T. H. Hartley, Esq.	30
" "	Pensioners... ..	Chelsea Hospital	The Commissioners	60
" 18	Agricultural Labourers	Stapleford Abbots, Essex .	Subscription	18
" "	Members of Mechanics' Institute ...	Richmond, Yorkshire ...	E. Wood, Esq., F.G.S. .	60
" "	Agricultural Labourers	Ringstead, Norfolk	— Sudbury, Esq.... ..	23
" "	Harvest Men	Heighton, Norfolk	{ William Stanton & F. C. } Youlders, Esqs.	44

Total 2,773

CHEMICAL SUBSTANCES AND PRODUCTS
OF INDIA.

The following notes are extracted from the official Catalogue of the contributions from India to the International Exhibition of 1862.

OIL SERIES.

Gurjun oil is obtained in Chittagong, from a large tree, formerly common in the hills of this district; it grows up with a straight stem to the height of 30, 40, and 50 feet before it throws out branches, which grow horizontally, and produce flowers and seeds during the rainy season. The seed may be said to be somewhat winged, the lower part contains the seed, and the upper part is composed of two stiff leaves. If they fall when there is a breeze of wind, they are carried a considerable distance, but so far as it is seen very few of them germinate in a natural state. The oil is obtained by cutting a hole in the tree, about 3 feet from the ground. The cut being about 4 or 5 inches deep into the trunk of the tree. The base is hollowed out to retain the oil. The whole of the hollow is cleared with fire, without which no oil exudes; after it is cleared the oil exudes, and is collected in the hollow at the base, and removed at intervals. The oil is thus extracted year after year, and sometimes there are two or three holes in the same tree, while the tree does not die. The oil is allowed to settle when the clear part separates from a thick portion, which is called the "Guad." If a growing tree is cut down and cut to pieces, the oil exudes and concretes on the stem and ends of the pieces, very much resembling camphor, with an aromatic smell also. It is said that the tree yields from 3 to 5 maunds yearly, *i.e.*, 240 to 400 lbs., and the same tree will yield oil for several years. It is a good balsamic medicine, and is very generally used as a substitute for copaiba; but it would be more valuable as a varnish: it is preservative to wood, to which it gives, with little trouble of application, a fine surface and polish; it becomes, however, white and milky if exposed to wet. It can be had here in large quantities at rupees 10 per maund.

Chalmoogree, or seeds of the Gynoo (*Cardia Odorata*), natural order Pangeaceæ, is a product of Chittagong. The tree which produces the seed from which this oil is expressed is a slender tree, with very delicate, but tough branches. The leaves are lance-shapen and dark green; the fruit is produced at the ends of the branches. It is very like a wood-apple, but rough, about 3 inches in diameter, and is filled with the seeds, each about an inch long, of an irregular shape, and about $1\frac{1}{2}$ inches in circumference in the thickest part of the kernel, is covered with a thin hard shell of an earthy colour. The seeds are obtainable in the north of this station, but it cannot be stated how much could be procured in any one season. The oil is very successfully used by native physicians for the cure of bad sores.

The Civil Assistant-Surgeon of this station, Dr. Beatson, remarks, "that there is no doubt that the oil expressed from the Chalmoogree seeds is a most valuable remedy in leprosy, and in obstinate ulcers of all kinds." He has seen ulcers, both leprous and non-leprous, take on a healing action on the application of Chalmoogree, after resisting every kind of treatment. The oil obtained in the bazaar is coarse and unpleasant, but as it is now well known and generally used in India, superior specimens can be obtained from other stations.

An oil is extracted from Sheal Katta (*Argemone Mexicana*), a common papaveraceous plant in Bengal. It is also called She-al-kanta. The plant from which the oil is obtained is a very common, troublesome weed, growing almost everywhere, on any abandoned heap of rubbish, and found in great abundance in Bengal and Hindoostan; at times with difficulty kept down in fields and gardens. The plant itself is well known, having prickly, thistle-like leaves, and bright yellow flowers. The seed yields a large quantity of oil, nearly as much as the common mustard seed.

Caron Oil is obtained from a crooked tree, growing in wet places near fresh water, very common in the sides of ditches which surround native dwellings. The seed is bean-shaped, and produced in a flat pod: the pods grow several together. The flower is pink and white, of the shape of a bean flower or blossom. The oil is used for burning in native lamps, and in large quantities for boiling with dammer to soften it for the seams and bottoms of ships. It is also often used by native practitioners for the cure of itches. A maund of seeds cost rupees 1-8, and the extraction of the oil by heat costs 8 annas: the oil produced amounts to $6\frac{1}{2}$ seers per maund.

Nageshur Oil is obtained from the seeds of a tree which grows wild in the jungles in the hills of the Chittagong district, and has been planted many years ago on the sides of the road leading to some of the dwelling houses in the station. The seeds are contained in a strong brown skin, one, two, or three in each. When ripe the skin bursts and the seeds drop out. The seed is covered with a thin hard shell. The oil is an excellent cure for cutaneous diseases, particularly itch.

An oil called Arenda, is obtained from a bush growing in the Chittagong district, which is used for fencing ground; it is readily increased by cuttings, which rapidly take root. The seeds are three or four, contained in a thin skin, which is black; the seed is of the same colour, and grows in branches; the stems of the bushes are not strong, but they answer excellently for fences, with split bamboo tied on each side to keep them straight and together, and the great advantage is that no kind of cattle eat them. The seeds are collected and the oil expressed in the usual way. It is not known that it has any medicinal qualities, neither has any experiment been made. As to its production it has no price in the market.

An oil called Kurunj is made from the *Geledupa arborea*; and produced in large quantities in Chota Nagpore.

The Surgoojah Oil is in most common use. It is made from a low plant, bearing a yellow flower. It is grown in very large quantities, being a favourite crop, of easy cultivation, and giving good returns.

Roosa or Scented Grass Oil is grown in Jubbulpore; it is extremely difficult to obtain pure. The best is said to be pressed at Ajmere. A miserable imitation of this oil is occasionally manufactured at Saugor. Twenty seers of the grass, which grows wild over the station and district, are mixed with two seers of common Teel oil, and then slowly distilled. The oil thus becomes highly impregnated with the peculiar roosa flavour, and is sold as such at 4 rupees a seer. Grass oil is never taken internally by natives, but they have a great faith in it as a stimulant to the functions of the several organs, when rubbed on externally. They also use it as a liniment in chronic rheumatism and neuralgic pains, but though they place great reliance on its virtues, its expense prevents its being used generally. It has a fragrant aromatic smell, persistent, and very agreeable at first, but after a time the odour becomes unpleasant, and gives many people a feeling of sickness with headache. The natives use it for slight colds also, to excite perspiration, by rubbing in a couple of drachms on the chest before the fire or in the heat of the sun. From information collected, it appears that the pure unadulterated oil has been used by many European officers with most wonderful effect in cases of severe rheumatism; and indeed such appears to have been the effect of its application, that two good rubbings of the pure oil on the part affected, produced such severe burning as to render a third application almost impracticable. In the cases brought to notice, the second application was found sufficient to ensure perfect cure.

Kunjee oil is extracted from seeds obtained from the pods of a bean grown in Jubbulpore. The tree grows to a great height, and is found in the jungles about, as well as in the station of Jubbulpore. It is used by natives for skin-diseases, and the following is Dr. Wilson's opinion regarding it: "Kunjee oil is extracted from the seeds of

a leguminous plant, cultivated in gardens; it is used externally in the treatment of itch, but is far inferior in its effects to sulphur. Internally it is said to be poisonous in large doses."

The *Rolleria tinctoria* (Cutlack) produces the Polang oil. The tree from the seeds of which this oil is obtained, is common in the Pooree district, and not cultivated to any extent elsewhere. It is very productive. The oil is used for burning and to adulterate other oils. It is extracted from the white kernel, found within the seeds or fruit, in the ordinary way. The oil costs about 17s. a maund of 100 lbs.

The *Bassia latifolia* produces an oil, which, besides being burnt as ordinary oils, is used to adulterate, and as a substitute for "ghee" or clarified butter.

Teak oil comes from Sumbulpore. The peculiar oil called chooa oil, is distilled from the jhoona; a few fragrant substances as sandal-wood and "khus-hus" being mixed with the compound. It is used as an unguent by people who can afford to purchase it, and medicinally in cutaneous diseases. The best sort sells at 5 lbs. weight per shilling.

The price of mustard oil is, and has been for some time, 20 rupees per maund, equal to 40s. for every 80 lbs. of oil. Dr. Mouat, the Inspector-General of Prisons in Bengal, directed its use in jails for burning purposes, whereby a saving of 14 rupees in every maund has been effected in the Maldah jail. The oil burns well, and would answer admirably for machinery purposes.

Wood oil, a balsam obtained from the *Dipterocarpus laevis*, is one of the commonest forest trees in Pegu, growing to an enormous size, and yielding as much as 30 gallons of oil each season, without injuring the tree.

The medical properties of this balsam are identical with those of the balsam of copaiba, for which it has been successfully substituted in hospital practice by Dr. O'Shaughnessy and other physicians.

This is only one of its many known qualities, and doubtless others remain to be discovered. It is an excellent solvent of caoutchouc; it has been used as a substitute for fish oil in curing leather, and found to answer. It makes an excellent house varnish, and the Burmese employ it extensively in the manufacture of torches.

The Nhan-pyai seed is made into oil for lamp and other household use: one basket will give about fifty-five viss of oil.

The Nhan Mai seed is made into oil for lamp and other household use: one basket will give sixty-five viss of oil.

The Poay Ngat is used for caulking boats.

From the wood oil known as Capawa, dammer is made, and a kind of torch used by the poor classes in Moulmein instead of a lamp.

The Cerbera Theretia oil is produced in the localities of Calcutta; no mention of the seed yielding this oil is to be found in any books, and as it was not included among the numerous samples submitted at the Great Exhibition of 1851, it is hoped it may be now and well reported on. The difficulty is to get at the kernel.

From the nut of the *Mesua ferrea*, well-known as the iron tree of Assam, the nahar oil is produced.

The *Ricinus communis*, known by the provincial name of "reice," is cultivated as a mixed crop. It is sown in June by almost all the villagers, not extensively, but principally for their own use. Its cultivation can be extended all over Oude. This oil is extracted by bruising the seed and then boiling it in water. The oil is afterwards skimmed off. This is the only seed out of which the oil is extracted by boiling—as in this case it is found cheaper than the method used for other seeds, which is by pressure. The cost of the seed is one rupee per maund, and the price of the oil is from 2 to 5 seers per rupee, according to the abundance of the crop in the season. The proportion of the oil yielded is about half the weight of the seeds boiled; used only for burning.

The Papaver Somniferum known as "poshtah," is cultivated in the locality of Lucknow; each ryot sows from 2 to 4 beegahs in the month of October. It is capable of

being cultivated all over Oude. The oil is extracted by the common native press. The cost of the seed is 10 seers for the rupee, and the oil sells for 3 seers for the rupee. Two-fifths of the weight of the seed employed is about the proportion of oil yielded by the native process. The poppy seed is eaten by the natives, made into sweetmeats, provided the opium has been extracted from the seed-vessel, otherwise it is bitter and narcotic, and, under these circumstances, the oil extracted is also bitter; used for cooking and burning.

In Behar this material is one of considerable commercial demand; it is expressed by means of a heavy circular stone, placed on its edge, made to revolve by a long lever, and the apparatus is set to work by draught bucksallo.

The *Linum usitatissimum*, native name "Tisee" or "Alsee" is cultivated as a mixed crop, principally with grain, all over Oude. It is sown in the month of October, and never irrigated. It is never sown thickly, as the object is to get a large amount of seed for oil, and not fibre. It can be cultivated extensively, and there is no doubt that, with proper treatment, profitably for its fibre. The oil is extracted by pressing. The seed sells for 18½ seers per rupee, and the oil for 5 seers per rupee. Every 5 seers of seed yield 1½ seers of oil by the native process of pressing; used for cooking and burning.

The pericarp of the nut of the *Anacardium Occidentale*, called Hegli Badam, contains a black acrid oil, called cardole, and is a powerfully vesicating agent. The oil is also applied to floors and wooden rafters of houses to prevent the attack of white ants.

THE PROPOSED NEW PATENT OFFICE.

The following is the recent report of the Commissioners of Patents to the Lords Commissioners of the Treasury on the subject of building a Patent Office, Library, and Museum:—

"In April, 1855, Lord Chelmsford, Lord High Chancellor of Great Britain, Sir John Romilly, Master of the Rolls, Sir Fitzroy Kelly, Attorney-General, and Sir Hugh McCalmont Cairns, Solicitor-General, being four of the Commissioners of Patents for Invention under the said Act, reported to your lordships in the words following:

"The 4th sec. of the Patent Law Amendment Act, 1852, enacts, that 'it shall be lawful for the Commissioners of Her Majesty's Treasury to provide and appoint from time to time proper places or buildings for an office or offices for the purposes of the said Act.'

"In pursuance of the requisition of the Lords Commissioners of Her Majesty's Treasury, dated in 1853, the Commissioners of Her Majesty's Board of Works provided certain offices for the Commissioners of Patents, being the ground floor rooms of the Masters' Offices in Southampton-buildings, Chancery-lane, thereto occupied by Masters in Chancery, abolished under the Act 15 and 16 Vict., c. 80; and an annual rent of £490 is now paid out of the Fee Fund of the Patent Office to the Suitors' Fund of the Court of Chancery for the hire of the same.

"This arrangement was not considered to be permanent; no lease has been granted, and as these offices are now required for the occupation of the registrars and other officers of the Court of Chancery, due notice has been given to the Commissioners of Patents, requiring them to give up possession as soon as other suitable offices can be procured.

"These offices were in 1853 sufficient in number and accommodation for the ordinary business of the office.

"In the year 1855 the Commissioners of Patents established a free public library within their office, containing works of science in all languages, the publications made by the commissioners, and the works upon patented and other inventions published in the British colonies and in foreign countries.

"This library has greatly increased and continues to increase, partly by purchases, but in a great measure by

gifts of valuable and useful books. It was resorted to at the first opening by inventors, engineers, and mechanics, as well as by barristers, solicitors, and agents engaged in patent business; it has become a collection of great interest and importance, and the number of readers has so much increased that at this time convenient standing room cannot be found in the two small rooms within the office which can be appropriated to the library. It is the only library within the United Kingdom in which the public have access not only to the records of the patents and inventions of this country, but also to official and other documents relating to inventions in foreign countries, and this without payment of any fee.

"A largely increased accommodation is urgently required.

"No suitable building can be found in the immediate neighbourhood of Southampton-buildings, either to be rented or for purchase.

"The new offices to be provided must be fire-proof, for the preservation of the original specifications and other records of the office; the offices now occupied are fire-proof throughout.

"The Commissioners of Patents are in possession of a collection of very valuable and interesting models of patented machines and implements, as also of portraits of inventors, many of them gifts, and others lent by the owners for exhibition. They are now exhibited daily, and gratuitously, in a small portion of the museum at Kensington assigned to the Commissioners of Patents for that purpose by the Lords of the Committee of Privy Council for Trade.

"A museum of this nature naturally increases, and the number of models now exhibited may be considered as forming only the foundation of a great national museum.

"The great work of printing the old specifications of patents, with the drawings attached thereto, enrolled in Chancery under the old law, dating from 1623 to 1852, and 12,997 in number, was commenced in 1853 and completed in 1858. All have been fully indexed in series and subjects, and the indexes printed and published. These prints of specifications form about 900 volumes (450 imperial octavo volumes of drawings, and the like number of imperial octavo volumes of letter-press). The indexes form seven imperial octavo volumes. These valuable works have cost, in transcribing, printing, lithographic drawing, and paper, upwards of £90,000.

"Notwithstanding this great outlay, the balance sheet of income and expenditure for the year 1857, prepared for the annual report of the commissioners, and laid before Parliament, shows a surplus income from the commencement of the Act, 1st October, 1852, to the end of 1857, of £6,000.

"The balance sheet of income and expenditure for the year 1858 will, no doubt, increase the total surplus to £12,000 or £13,000.

"The work of printing the old specifications being completed, as above stated, the expenditure on that head ceases altogether, and consequently the surplus income of the year 1859 is estimated at £31,000; adding this sum to the available surplus of £12,000, as above stated, and allowing a margin of £3,000, £40,000 may be safely estimated as the sum available for building purposes at the end of the year 1859.

"The Act of 1853 (16 Vict., c. 5) converted all the fees imposed by the Act of 1852 into stamp duties, thereby passing the whole income of the office to the Consolidated Fund. The expenditure of the office is estimated and voted annually by Parliament.

"There is no appearance of diminution in the number of applications for patents, and they may be safely estimated to continue for future years at 3,000 in each year.*

"This number will produce £95,000 in stamp duties, and adding thereto £1,600 for the average annual proceeds of sales of printed specifications, the future annual gross

income may be taken at £96,000. The gross income is, however, liable to a deduction of £18,500 on account of revenue stamp duties, leaving the real available future income of the Patent Office at £78,100* per annum, or thereabouts.

"The Patent Law Amendment Act, 1852 (15 & 16 Vict. c. 83) imposed certain revenue stamp duties upon patents. These duties have hitherto produced £15,300 per annum, and that sum has been charged against the office in the annual balance sheet of income and expenditure. These duties are estimated for future years to produce £18,500,† or thereabouts.

"The work of printing the old specifications being completed, as above stated, the yearly future cost of the current specifications, abstracts of specifications, journals, indexes, &c., in letter-press printing, lithographic printing, and paper, will not exceed‡ £17,500 per annum, as contrasted with the average yearly expenditure on those three heads of £39,375 within the years 1856-7-8.

"The Commissioners of Patents are of opinion that it is not expedient to propose to Parliament a reduction of the scale of stamp duty fees imposed by the Act of 1852.

"They are of opinion that the fees paid upon the passing of a patent are not too heavy; the large number of applications (3,000 in each year) accounting for the large amount of income. Any material reduction in the amount of fees would undoubtedly tend to increase the number of useless and speculative patents; in many instances taken merely for advertising purposes.

"The fee stamp duties and the revenue stamp duties are as follows:—

	Fee stamp duties.			Revenue stamp duties.		
	£	s.	d.	£	s.	d.
Within the first six months from the petition for provisional protection to the filing of the specification	20	0	0	5	0	0
On the patent at the expiration of the third year...	40	0	0	10	0	0
On the patent at the expiration of the seventh year... (The patent is granted for fourteen years.)	80	0	0	20	0	0

"There are 3,000 petitions for provisional protection presented in each year or thereabouts. Of this number 1,950 reach the patents, and 250 patents pay the £50 additional stamp duty required at the expiration of the third year; 1,450 patents, or nearly three-fourths of the whole thereby becoming void. Probably not more than 100 of the surviving 550 will pay the £100 additional stamp duty required at the end of the seventh year."

"Considering the beneficial results of the additional payment of £50 in sifting useless patents, the commissioners are of opinion that it is not expedient to reduce the amount, and so long as the surplus can be expended for the benefit of patentees and that portion of the community which is principally interested in and connected with the practical application to public purposes of discoveries and improvements in science and art.

"They are of opinion that the surplus income, calculated as before stated, to amount to 30,000 at the end of the current year 1859, and to increase in each succeeding year at the rate of £20,000 per annum, may be beneficially applied in the purchase of ground in a central situation, and in the erection thereon of a sufficiently spacious fireproof building for the Patent Office and public free library attached thereto; and that the surplus fund may be beneficially applied in the purchase of ground and the erection thereon of a permanent and spacious building for the Patent Office Museum, sufficient ground being taken for the extension of the building, from time to time, as may be required.

* The available income of the Patent Office amounted in 1860 to £92,000.

† The revenue stamp duties produced £18,485 in 1861.

‡ The cost of printing, lithographic drawings, paper, books, and binding, for the year 1861, amounted to £18,800.

* The number of applications in 1861 was 3,276.

"This is the more necessary, inasmuch as models of a most interesting and valuable description lie scattered over the kingdom, in many instances constructed at a great expense, for legal and other purposes, for which the owners have no present use, and many of which occupy a space inconvenient to them. These models, or many of them, would, as the commissioners confidently expect and believe, be presented or entrusted to them for exhibition in such museum, provided the public are allowed free access to it at all reasonable times.

"The Commissioners of Patents therefore request that the Lords Commissioners of her Majesty's Treasury will be pleased to sanction the application of a certain portion of the surplus now derived from the fees paid on patents for the purpose of accomplishing the objects above mentioned, and that with this view their lordships will be pleased to give the necessary directions to her Majesty's Board of Works, to obtain a proper site for the proposed new Patent Office and library, to be selected with the approbation of the Commissioners of Patents and with the sanction of the Lords Commissioners of her Majesty's Treasury, and also to prepare the necessary plans, elevations, and specifications for this purpose, also to be submitted to the Commissioners of Patents for their approval, and to make contracts for the building of the same when approved.

"If their lordships consent to these proposals, the Commissioners of Patents have to request that a sufficient sum for the purpose, so far as the same may be required for the year 1858-9, may be included in the estimate to be laid before Parliament in the present session for Patent Office expenses."

This report was, immediately on the receipt thereof by their lordships, transmitted by them to her Majesty's Board of Works, with instructions that a convenient site should be provided for the proposed new offices, public library, and museum, and also that plans and estimates should be prepared for Parliament.

In 1859 the Lords Commissioners of her Majesty's Treasury and the Chief Commissioners of her Majesty's Board of Works approved of a site for this purpose, lying at the northern extremity of the gardens of Burlington House, and thereupon plans and estimates were prepared for the new Patent Office and library, by Messrs. Banks and Barry, the architects appointed by the Board of Works, which were so arranged as to form a portion of one complete design for the appropriation of the whole site of Burlington House and gardens for various public buildings. This plan was, however, suspended or altogether abandoned on the change of government in that year (1859), and no other site has since been provided.

The space required for these buildings may be estimated from the following circumstances:—It is considered by the Commissioners of Patents to be highly desirable, and indeed necessary, that the Patent Office Museum should be so constituted as to become an historical and educational institution for the benefit and instruction of the skilled workmen employed in the various factories of the kingdom. These persons constitute a class which largely contributes to the surplus fund of the Patent Office in fees paid upon patents granted for their inventions. Amongst the various things necessary to be done in order to accomplish this object, it is considered to be of great importance that machines and exact models of machines, in subjects and series of subjects, showing the progressive steps of improvement in each branch of manufacture, should be exhibited. For example, taking the case of steamboats, in order to show the rise and progress of this invention, it is necessary to exhibit in a series of exact models of machines, or by the machines themselves, each successive invention and improvement in steam propellers, from the first engine on the paddle system that drove a boat of two tons burthen to the powerful machinery of the present day on the screw system in first-rate ships of war. Accordingly the present museum presents a very interesting collection to elucidate this subject. The

original small experimental engine that drove the boat of two tons burthen above referred to, is now in the museum, and stands the first in the series of propellers and models of propellers; and in order to explain how the existence of such a museum is the cause of its becoming daily more perfect, it may be useful to state that in this branch the following valuable and interesting original machines and models of machines have lately been added to the museum, either by the gift of the proprietors or at a very trifling expense:—

First, a perfect model of Trevethick's locomotive engine, the first engine that ran upon common roads, in 1803.

Secondly, an original stationary and pumping engine, made on Newcomen's principle, to which Watt applied his important invention for condensing, by the means of a separate vessel and air pump, the steam that had been used and formerly condensed in the cylinder.

Thirdly, the original fixed engine made by Watt in 1788 for converting rectilinear into circular motion, in order thereby to drive mill work by the use of his invention known as the sun and planet motion. These two last-mentioned engines drove for many years the machinery used at the Soho Works of Messrs. Bolton and Watt, near Birmingham.

Fourthly, the very early original locomotive engine, brought from the Wylam Colliery, in Durham, the first engine which moved by the contact of smooth wheels on smooth rails. This engine was worked at the colliery nearly fifty years, commencing in 1813.

And fifthly, the original, "Rocket" locomotive engine made by George Stephenson and worked at the opening of the Liverpool and Manchester Railroad in 1829, which unfortunately was the cause of Huskisson's death.

These instances are selected from one division of the museum, and are enumerated for the purpose of pointing out, in the first place, the value of such a museum in an historical and social as well as in a scientific point of view, and in the second place, the large space that must necessarily be required for the purpose of their accommodation, in such a manner as to enable those who wish to study them to be able to do so without difficulty or inconvenience. It is also to be borne in mind that the number of the models and machines will increase rapidly, year by year, and consequently that a large additional space of ground should be secured for the future extension of the museum.

The commissioners are also in possession of a large number of valuable models, which still remain in cases, because room cannot be found for their exhibition in the space assigned to them in the museum at South Kensington; indeed, so limited is that space, that they are obliged to postpone the acceptance of many valuable models offered as gifts by manufacturers and inventors. Several good models of machines have also, for the same reason, been lately removed to afford room for machines of a higher degree of interest.

The public library at the Patent Office is in the same crowded condition; the books daily increase in number, and many remain in cases, for the reason that shelf-room cannot be found for the books, and still less accommodation for the readers.

The inconvenience arising from this source is accurately pointed out in a memorial, presented to the Commissioners of Patents on the 22nd of July last, and signed by forty-six gentlemen, consisting of eminent mechanical engineers, chemists, manufacturers, inventors, and agents, who are readers in the public library of the Patent Office. A copy of the memorial, so far as it relates to this subject, is appended to this report.

In connection with the erection of the necessary buildings for the objects above specified, a most important consideration is the spot to be selected for that purpose. The readers in the library being of the class of scientific persons, barristers, mechanical engineers, chemists, inventors, skilled workmen in the various factories, solicitors, and patent

agent, it is obvious that the readers should be enabled to read the books and examine the machines and models at the same time and in the same place, and, consequently, that the Patent Office, Public Library, and Museum, should be either under the same roof or in very close proximity, and also that the spot to be selected should be of easy access to the class of persons above referred to.

The proposed site for the Patent Office Buildings in Burlington House-gardens having been abandoned, as above stated, the Commissioners of Patents, in the following year (1860), proposed to your lordships, Fife House in Whitehall as a convenient site for the Patent Office Buildings and Museum, and one that would unite all the necessary requirements already referred to. This proposal was favourably considered, and a minute of the treasury was transmitted thereon to the Board of Works. It was found, however, that until the question of the embankment of the river and the roads of access to the main river-side road should have been settled by Parliament, no appropriation of that site for building purposes could be made.

This difficulty is now removed. The several roads have been set out and definitively fixed by the Thames Embankment Act of the present session, and it is consequently now open to her Majesty's Government, if it shall think fit to do so, forthwith to appropriate the site of Fife House for the erection of the proposed Patent Office buildings.

The Crown leases of Fife House and the several buildings adjoining thereto have lately expired, and therefore the whole property is now at the disposal of her Majesty's Commissioners of Woods and Forests in right of the Crown; and the Commissioners of Patents are informed that the site proposed can be obtained either by purchase or on a Crown building lease.

The plan attached to this report shows the road of access from Whitehall to the river-side main road, and the site proposed to be taken (the Patent Office Library and Museum marked A. and coloured red); also the land to be reclaimed by the embankment marked B. and coloured green) proposed to be reserved and appropriated for the extension of the museum in future years.

The surplus income of the Patent Office, applicable to building, amounts in the aggregate to £129,000. The Commissioners of Patents do not propose to ask your lordships to apply for building purposes any portion of this sum which has already been received and has formed part of the general revenue of the country, but merely that the surplus income of the present year (1862) and that of succeeding years should be applied for the purposes above enumerated.

The surplus income of the current year (1862) is estimated at £40,000.

The Commissioners of Patents therefore earnestly request that your lordships will be pleased to sanction the appropriation of the site proposed by them for the Patent Office Buildings; that your lordships will be pleased to give the necessary directions to her Majesty's Board of Works to obtain the proposed site, either by purchase or by a lease from the Crown, and to direct the architects to prepare the necessary plans, elevations, and estimates; and, further, that your lordships will be pleased to direct such plans, elevations, and estimates to be laid down before Parliament at the commencement of the ensuing session; and to apply for a vote for such proportion of the estimated cost of the buildings as may be required for the year 1863-4; and, should it be decided to purchase the land for the site, also to apply to Parliament for the sum of money necessary for that purpose, all such moneys to be repaid out of the surplus income for the current and succeeding years.

Dated 7th August, 1862.

WESTBURY, C.
JOHN ROMILY, M.R.
WILLIAM ATHERTON, A.G.
RUSSELL PALMER, S.G.

STEAM FIRE ENGINES.

A self-propelling steam traction and fire engine, made by Mr. W. Roberts, of Messrs. Brown, Lenox, and Co.'s works, Millwall, for Messrs. J. C. Mare and Co., was tried on Friday last, at Mr. Hodges' distillery, Church-street, Lambeth. The engine weighs, in working trim, and including 5 cwt. of coal and 40 gallons of water in the tank, 7½ tons. It has Benson's water tube boiler, with a donkey pump for maintaining an artificial circulation of the water between the external water casing and the water tubes. The steam is worked through a pair of 6-in. upright cylinders with 12-in. stroke, which can be geared at pleasure to drive either or both driving wheels (5ft. in diameter), and at a speed of fourteen miles an hour, although for a short run a rate of nearly eighteen miles an hour has been attained. The wheels are driven through a pitch chain, and simple means are provided for compensating for its gradual wear. The driving axles, one to each wheel, are hung each on two easy springs, and instead of axle guards, radius rods are employed to connect them with and secure them to the framing. A single steering wheel in front permits of turning the engine within a circle 12ft. in diameter, and nearly as quickly as a good mounted rider could turn a horse. Nothing, indeed, can exceed the ease with which the engine is controlled in all its movements. On the engine shaft there is a pulley and windlass, the former for driving machinery, if required, and the latter for hoisting, for which purpose, we believe, Messrs. Mare will employ the engine to a large extent. For the purposes of a fire-engine two of Mr. Roberts' double-action pumps, each 9½ in. in diameter, and filling for a length of 7 in. at each revolution, are provided. The boiler is purposely made to hold a rather large quantity of water, and the time occupied in raising steam from cold water was considerable. On getting to work, however, a 1½ in. jet was thrown to the top of a chimney 140ft. high, and afterwards to a horizontal distance of 182ft., not measuring the broken water and spray, which reached 10ft. or 15ft. further. The steam was not maintained at a uniform pressure—indeed, it was at one time as high as 170lb. on the square inch, and, again, very little could be found. In this respect, however, Mr. Roberts hopes to be able to make an improvement before the engine is fairly put to work. During the trial he showed how, while the pumps were making 50 double strokes per minute, he could play through a nozzle less than one thirty-second of an inch in diameter; and other nozzles respectively three-sixteenths of an inch, ½ in., ¾ in., 1 in., and 1½ in. were successfully used. The engine returned to Millwall at a late hour, without accident.

SOUTH STAFFORDSHIRE EDUCATIONAL ASSOCIATION.

The third annual meeting of the South Staffordshire Association for the promotion of adult education and evening schools, took place in Wolverhampton, on Tuesday, September 23, under the presidency of the Right Hon. Lord Lyttelton. At two o'clock the general meeting was held in the Athenæum rooms, Queen-street, for the transaction of the ordinary business of the association. Among those present, in addition to the noble Chairman, were Harry Chester, Esq., Vice-President of the Society of Arts; the Hon. and Rev. S. Best, of the Southern Counties Adult Education Society; J. Slaney Pakington, Esq., President of the Worcestershire Union of Educational Institutions; Barnett Blake, Esq., of the Yorkshire Union of Institutes; the Revs. J. P. Norris, and R. H. Sandford, H.M. Inspectors of Schools; J. E. Beasley, Esq., of Bloxwich; the Revs. H. F. Newbolt, of St. Mary's, Bilston; J. W. Grier, of Stourbridge; J. H. Thompson, of Cradley; J. H. Iles, T. H. Campbell, and J. Richardson, of this town; T. Slater, of Sedgley; and W. Stephens, of Wednesfield; Professor Beckett, Mr. H. H. Fowler, Mr. J. N. Langley, Mr. A. W. Wills, Mr.

F. Talbot, of Spon Lane; Mr. Crabtree, Gold's Hill, and the representatives of the various institutions in union with the association.

LORD LYTTELTON, without making any opening speech, at once called upon

MR. JONES, the Secretary, to read the report of the committee. It stated that last year there were apprehensions lest, through lack of that general support from the employers of labour in the district which they originally anticipated, and from the want of co-operation on the part of many Institutions in the locality, they should be compelled to modify their plans very considerably; but the increasing interest which had been manifested towards the Society had enabled the committee to extend their plans since that time, and they had no doubt that as the beneficial operations of the Society became more generally known, they should receive a corresponding amount of support from the district. Ten additional Institutions and fifteen night schools have been provisionally received into union during the year, and several other societies had the matter under consideration. With very few exceptions all the important Institutions in the district for secondary education were now connected with the Association. At one of the meetings of the executive committee, Mr. Talbot tendered his resignation of the office of hon. secretary, and the committee recorded their sense of the disinterestedness and ability with which he had discharged his duties, added his name to the committee, and appointed Mr. Jones to the office of secretary, together with that of agent. At another meeting it was decided to fix the fees for the Society's lectures at 10s. 6d., the Association to defray the travelling expenses of the lecturers. The general examinations in connexion with the Association were held in March. 157 candidates from different night schools and evening classes were examined, and out of these 91 gained certificates. The final examinations of the Society of Arts were held in May, and fifty-one candidates were successful; seven prizes of the aggregate value of £25 were gained by them. The increase in the number of candidates examined had been satisfactory since the Society was established. The committee hoped that another year the examinations of students in science classes, under the Government department of science and art, would be held under the direction of the Association. A considerable number of professional lecturers on the Society of Arts list had consented to lecture at reduced rates at Institutions in union provided four or five consecutive engagements could be secured. Many gentlemen in the locality had also promised lectures; associated Institutes could thus obtain good lectures at 10s. 6d. each. As regarded finances, the Committee stated that they had been able to carry on successfully the work of the Society, and at the same time to reduce the balance due to the treasurer at the last annual meeting. They required about £200 per annum, and had at present only a reliable income of from £130 to £140; hence they depended in no slight degree upon donations. They had directed the secretary to bring the operations of the Society under the notice of the employers of labour, and to solicit them to become subscribers. The organising agent had superintended evening classes by regular weekly attendance at nine Institutions and evening schools, making 285 visits of one or two hours' duration. He had also delivered four lectures, and attended 20 public meetings for the purpose of explaining the operations of the Society. He had visited 14 night schools and examined 150 candidates in reading, besides which he had transacted much of the ordinary business of the Association. The Committee hoped that next year the number of candidates for examination from night schools might be increased, and expressed their continued appreciation of the examination scheme of the Society of Arts. The report then referred to the recent Educational Conference at Dudley, and stated that the Committee had resolved to print an abstract of the papers read on that occasion. It was their intention to hold a similar conference annually. In conclusion, they said they

had no doubt that another year would witness far greater extension of the plans of the Society than had been the case in any previous year since its establishment.

The night-school visitors reported that they had visited twenty night schools, having 925 scholars and 58 teachers. The report, after speaking favourably of the schools, lamented the smallness of their proportion in relation to the population. Thus, while the population of South Staffordshire was 220,000, the number of scholars in attendance upon night schools was but 638, or about 1 in 300, and in many districts there was no night school at all. In Wolverhampton, with a population of 50,000, the average attendance upon the night schools was but 60, while in Walsall, with a population of 21,000, it was only 40. The night school examiners reported that they had examined 156 candidates of 21 different schools, which was more than double the number at the examination of the previous year. Twenty-nine obtained first, and sixty-one second class certificates. The organizing master reported that the general condition of the Institutions appeared to be improved, and several had found it necessary to provide themselves with more commodious premises. He recommended to managers the consideration of providing suitable amusement for members, rather than to seek to make matters scientific and educational humorously attractive. He pointed out the great want of teachers both for Institutions and night schools, and the great superiority of paid ones over gratuitous labour, suggesting that some means should be taken to retain the services of successful candidates for the Society of Arts certificates as teachers. An animated discussion ensued upon this portion of the report, and the general opinion seemed to be that a combination of paid and unpaid agency would best meet the difficulties that lay in the way of providing teachers, while the suggestion as to successful students was generally approved.

MR. H. CHESTER, speaking of the association, said it appeared to him generally to be based upon a very excellent foundation, and to be admirably worked, while its full importance would disclose itself in a short time. The whole was so compact and so necessary, that he should be sorry to see any stone struck out of the edifice, and counselled them above all things to preserve the organising agency, which was a very valuable feature of the Institution. All they stood in need of was a little pecuniary help, which, as the benefits springing from the Institution developed themselves, would no doubt be forthcoming from the employers of labour. He trusted soon to find, not only all the men, but all the women, taking advantage of the examinations for the certificates and prizes of the Society of Arts; for he was happy to tell them that this year a young female candidate at Birmingham had taken the first prize in English literature against all England. The examiner said that her papers were most admirable, and those on Shakspeare some of the best he ever read.

The financial statement was then read, and showed that the receipts had been £170 10s. 8d., and the payments £147 18s. 11d. Some expenses, however, were owing, and some subscriptions were due. The balance against the Society at the last meeting had been reduced from £56 8s. 4d. to £31 5s. 10d.

Some formal business was then disposed of. West Bromwich was selected as the place of meeting for next year, and votes of thanks were passed to the noble President, to the lecturers of last year, the examiners, the treasurers, the local Board, and others, and the proceedings were adjourned.

THE DINNER.

At 4 p.m. the members and their friends dined together at the Swan Hotel, the Mayor, G. L. Underhill, Esq., occupying the chair, and the Rev. J. H. Iles, rector of Wolverhampton, taking the vice-chair. At half-past 5 the successful candidates assembled in the Athenæum

Rooms, where tea was provided for them, and many of the clergy and friends of the candidates attended.

PUBLIC MEETING IN THE CORN EXCHANGE.

At 7 o'clock a public meeting was held in the Corn Exchange, which was very numerously attended. In addition to the gentlemen mentioned as attending the morning meeting, the following were present:—The Mayor of Wolverhampton, Rev. J. Hampton, Messrs. J. Hartley, C. B. Mander, George Thompson, W. M. Fuller, W. J. Brevitt, W. Fleeming, F. Fellows, &c.

Lord LYTTLTON, in addressing the meeting, alluded to the absence of Sir J. Kay Shuttleworth, who had promised to attend, stating that it had arisen through a misunderstanding, but they could hardly wonder at his not being present when they knew that he was engaged almost day and night in his duties as chairman of the committee for the relief of the great distress in Lancashire. His Lordship went on to say that although the distress had been so severe in the cotton districts, and although the effects of the civil war in America had been felt in this district, still this had not impeded the work of the Association, which had increased prosperously. Of this his lordship proceeded to give instances, drawn from the reports, stating also the changes which the Committee had made during the year. They could take very little credit for the progress of the Association; all the credit he could claim for them was that at no time, even when there was some little doubt about its success, did they despair of its progress or ultimate success. Lord Lyttelton called attention to the desire of the Association to spread a knowledge of drawing and science among the population of this district, by means of the classes that were being established in connection with the Government Department of Science and Art, and said if they could succeed they would be giving to the operations of the Association a completeness which had not been attempted before. He expressed a hope that some of the speeches that were to follow would have reference to the future lives of those persons who had taken prizes and certificates, and hoped that every successful candidate would feel the responsibility cast upon him by the distinction he had thus acquired. He trusted also that they would feel it a pleasure, a pride, and a duty, to apply what they had learned not to their own advantage solely, but to encouraging and developing the ability of others. With regard to the effects of the education they were endeavouring to spread, he said they rather looked to future generations for them to show themselves; but yet there was no doubt that the fruits of their labours were apparent around them. As a remarkable instance of the moral improvement that was going on, his lordship mentioned that in Gloucestershire there were seven gaols, and, notwithstanding the increase of population that had taken place, six of them were now shut up, one answering the full wants of the county. In conclusion, his lordship said that the diminution of crime might be due to many causes, but it could not be denied that education had had a great share in that improvement.

The Hon. and Rev. Mr. BESR then moved, "That the past experience of Unions of Educational Institutions prove them to be well adapted for the promotion of secondary education, and that the South Staffordshire Association is fully deserving of the warmest support." He thought that the concerns of the Union had been carried on in a most business-like and practical manner. If other than pecuniary support were not given to the association its object would not be successfully accomplished. He thought that this Institution had filled up a gap which had long existed between the time when a boy left school and the time at which he was competent to pass the examinations of the Society of Arts. If the question was asked, "How is education promoted by this Union?" the answer would be; "By examinations." The certificates given at these examinations were very effectual in favourably influencing employers in the immediate district, but their efficiency would be greatly augmented if a more

central value were given to them. This had been done in several unions, and it was desirable that such should be the case in this one. Finally, he expressed a hope that the South Staffordshire Association would go on prosperously in its career of usefulness.

Mr. J. SLANEY PAKINGTON expressed the pleasure he felt in attending the proceedings of the anniversary; and he hoped the gentlemen who were present would derive some little gratification on a future day from a return visit to an anniversary of the Worcestershire Union of Institutions. He pointed to the admirable manner in which the unemployed in Lancashire were bearing their distress, as in some way owing to the benefits which had been produced by mechanics' institutions. On account of what Sir James K. Shuttleworth could have told the meeting of the proceedings of the institution in Lancashire, he regretted greatly the absence of that gentleman. Whilst many mechanics' institutes had failed in many cases, in others less noted they had succeeded; and in Worcestershire success was eminently following the combination of the institutions in that county. The resolution he had to speak to was, "That the experience of the unions of the Mechanics' Institutes proved them to be well adapted for secondary education." It was this secondary education which was so marked an element in the education of many men who had made themselves eminently conspicuous in the history of this country, and which composed a conspicuous feature in the education of the people of England; and it was the union of institutions especially designed for the promotion of secondary education in localities which was calculated greatly to increase the usefulness of the individual institutions. The South Staffordshire Association was too well known for its usefulness to make it necessary for him to advocate it; but he would, in conclusion, say that, by the influence of the unions, the different institutions would be placed high among the strongest bulwarks of the state.

The successful candidates who had been awarded certificates were then called up to the platform, and they received their certificates from the hands of the noble chairman amid the plaudits of the audience. The successful candidates from the night schools having received their awards,

The Rev. J. P. NORRIS congratulated the prize takers on their success. He had no longer, he said, to advocate the desirability of education. In June it was his pleasure to labour in Lancashire. Whilst there, he saw 170 operatives accompany Sir James Kay Shuttleworth to tea, at which they all sat down together. There was not one of those operatives who did not understand the cause of their distress as well as Sir James and himself understood it. He asked Mr. David Chadwick to what the wonderful change (as compared with 1840, for instance), in the conduct of the operatives under somewhat similar circumstances was to be attributed? Mr. Chadwick traced it to the educational clauses of the Factories Act of 1843-4. Under the highly salutary influences of the working of those clauses the present generation of artisans had grown up, and hence the conspicuous difference in their conduct. The rev. gentleman then delivered some excellent advice to the students. The noble chairman next distributed various money prizes to the successful after prize candidates of the iron and coal masters' prize scheme association.

Mr. HARRY CHESTER then proposed a resolution which pointed to the success of the Examinations of the Society of Arts as an evidence of the value of the assistance of that Society. He said he was for some years one of the officers of the Council of Education. The result of that experience satisfied him after the Exhibition of 1851 that the great object to be sought with a view to promote the education of the country was to obtain the modes and means of extending the education of adults—the master-key of the whole question of education. He said that he had come a great distance to congratulate the members and friends of the South Staffordshire Society. Great as were the usefulness and success of the great so-

cieties elsewhere, he believed that there was not elsewhere a society of more value than the one whose interests were now before them. In South Staffordshire they had exactly the right Institution to produce the results desired. He was literally surprised to see the great success which had attended the society during the very brief period of its existence. Mr. Chester, at some length, explained the plan and mode of operation of the Society of Arts examination, and pointed the value of the prizes and certificates given by the society. He mentioned that the student who had taken the prize that was offered by his late Royal Highness Prince Albert for the student who obtained the greatest number of prizes and first-class certificates during three consecutive examinations was a young man in a woolstapler's warehouse in Bradford, and a member of its Mechanics' Institute. His name had since been sent in by the society to Lord Granville with the view of his obtaining an appointment in a public office. In conclusion, Mr. Chester advised the association never to part with their president, nor with their organising agent, for such an officer was the backbone of their Institution.

The Rev. G. C. CAMPBELL seconded the motion, and noticed as one good effect of the examinations that those students of the Working Men's College who obtained certificates became anxious to act as teachers to others.

The CHAIRMAN having distributed the prizes and certificates of the Society of Arts to the successful candidates amid general applause,

Mr. BLAKE, from Yorkshire, then moved that the extension of a sound and healthy education was among the most urgent claims of the times, and urged upon the employers of labour their duty to support the objects of the Association. They had found the operations of the Yorkshire Union productive of much good; and hence he most heartily commended the South Staffordshire Association, which seemed to possess many advantageous features over other Unions of Institutions, to the people of the district. He felt sure another year they should have to congratulate the Association on increased usefulness and success.

The Rev. J. HAMPTON seconded the resolution, and announced his intention of immediately commencing night classes in his parish (St. John's, Wolverhampton).

After a vote of thanks to Lord LYTTLETON, on the motion of Mr. G. L. UNDERHILL, the Mayor, the proceedings terminated.

(As the meeting of the Association was held under the auspices of several Institutions in the town, it had been arranged for the secretaries to read short abstracts of the last year's work of the Societies; but there was not sufficient time for the purpose. The reports, however, set forth very clearly that the leading Institutions in the town were doing their work successfully. The Working Men's College has had an average attendance of 65 students during the year, and more commodious premises have been taken for the Society. Science classes are about to be established here. Altogether, the College is in a most prosperous condition. The Young Men's Christian Institute have carried on extensive class operations during the year, and have considerably increased their number of successful candidates at the last Society of Arts' Examination. Their report alludes to the assistance which the Society has derived from the South Staffordshire Educational Association.)

Proceedings of Institutions.

FARNHAM YOUNG MEN'S ASSOCIATION.—After nine years of continuously increasing prosperity the Committee of the Farnham Young Men's Association lay the third triennial report before the members and lady subscribers. They feel they can confidently appeal to such report as showing the advance the Association is making towards

the accomplishment of those objects for which it was established; and they can appeal to the public at large to testify the good the Association is doing among the young men of Farnham. The committee feel that the library is one of the most important agents for good in the constitution of the society, and it has been their constant endeavour to place upon its shelves only such books as are of an unexceptionable moral tendency, as well as instructive and amusing. The cost of many expensive works of reference, which were purchased during the year 1861, caused a deficiency on the balance sheet of that year, and in consequence not quite so many books as usual have been purchased during the present year. The cost of binding has now become a heavy demand upon the limited sum available for the purchase of books, and the committee earnestly press upon the members the importance of taking care of the books whilst in their possession—much more injury being done to the volumes in many instances than can be at all justifiable. The library now numbers 1509 volumes, an increase of 571 volumes since the publication of the last report. The money expended on the library during the three years ending September 1st, 1862, has been £138 1s. 9d., or an annual average of £46 0s. 7d., the average of the three previous years being just under £49. The various branches of expenditure were: for books, £89 0s. 5d.; periodicals, £19 15s. 8d.; binding, £14 8s. 8d.; and for library incidentals, £14 17s., which includes £7, the cost of printing the last library catalogue in July, 1860. The issue of books for home reading has been rapidly increasing. Between October 1st, 1858 and October 1st, 1861 (the returns being made up and reported at the commencement of each lecture session), no fewer than 10,578 volumes were issued to the members, and 2,626 monthly parts of periodicals. Taking the average number of members during these three years to be 280, of whom only about one-half avail themselves of the library, this would give about 25 volumes and 10 monthly parts of periodicals a year to each reader. The committee are confident, from the reports of the sub-librarians, that when the returns are made up for the present year, a still further increase will be shown. With these statistics before them (considering that only one volume at a time can be issued to any reader) are not the committee justified in their opinion that no library could be more fully appreciated? The reading room is now supplied with the following papers and periodicals—Papers: Times, Standard, and Evening Star, daily; County Chronicle, Gardener's Chronicle, Illustrated London News, Surrey and Hants News, Sussex Express, Punch, and West Surrey Times, weekly, together with many occasional papers supplied by friends. Periodicals: Art Journal, Athenæum, All the Year Round, Blackwood, British Messenger, British Workman, Cornhill (2 copies), Chambers's Journal, Every Boy's Magazine, Fraser, Good Words, Leisure Hour, Macmillan (2 copies), Mechanics' Magazine, Nichols's Register, Once a Week, Quarterly Review, Society of Arts' Journal, St. James's Magazine, Sunday at Home, and Temple Bar. The museum of natural history, geology, numismatics, and objects of general interest, has entirely outgrown the space available for it in the present reading room. The Committee hope that more space may become available on some future day, and they beg to offer their best thanks to all those who have contributed objects of interest to the collection, and to Mr. R. O. Clark, the curator, under whose sole management it is, for the time and trouble he must have devoted to it. The expenses of the museum are not charged upon the general funds of the Association, but are paid by the curator with money specially collected by him for that purpose. The following lectures and elocutionary entertainments have been delivered during the last three sessions:—1859-60—Three Weeks in Ireland, Rev. G. H. Sumner; Insect Life (2nd lecture), Rev. T. G. Clarke; Reading Aloud, Rev. T. G. Hatchard; Birds, Rev. W. H. Hawker; The Genius of Wordsworth, Dr. Lane; Mineralogy, with notes and

sketches taken during a balloon excursion, E. Vivian, Esq.; The Arctic Regions, Rev. T. G. P. Hough; two lectures—Recollections of the Peninsular Campaigns, Rev. A. B. C. Dallas; two lectures—The Microscope, Rev. John Bacon; Things above the Earth, Rev. S. Mayhew; Earthquakes, Rev. Thomas Bacon; the members of the Elocution and Discussion Section gave two entertainments during the session, and three open nights. 1860-61:—The Glaciers of the Alps, Rev. E. L. Berthon; Things on the Earth, Rev. S. Mayhew; Water Power, Rev. G. T. Hoare; A Visit to the General Post Office, Rev. T. G. Hatchard; A Visit round Oxford, Rev. F. Trench; Modern Discoveries in Central Africa, Rev. E. D. Wickham; two lectures—The Air we Breathe—its Chemistry, Mr. R. Lidgate; Locomotion, Rev. John Bacon; A Visit to the Holy Land, Rev. C. T. Mayo; Tour in Brittany and the North-West of France, Rev. C. A. Seymour; The Poetry and Poets of Germany, Rev. W. L. Blackley; the members of the Elocution and Discussion Section gave three entertainments during the session. 1861-62:—The Incentives to Studious Pursuits, Rev. Mark Cooper; Geology in relation to Scripture, Rev. J. S. Hoare; The Instruction of the Deaf and Dumb, W. Sleight, Esq.; Things on the Earth, Rev. S. Mayhew; Volcanoes, Rev. Thomas Bacon; Wolvesey and its Historical Associations, Rev. Charles Collier; China, Rev. Hugh Huleatt; The Huguenots, Rev. Thomas Marzials; Ancient and Modern Egypt, Rev. C. T. Mayo; The Physical Geography of England, Rev. W. Brodie; the members of the Elocution Section—one entertainment; the members of the Aldershot Institution—one entertainment. During the last two sessions a register was kept of the numbers attending each lecture. In the session of 1860-61, 2,922 persons attended the fifteen meetings, and in that of 1861-62, 2,703 attended the twelve meetings. The receipts and expenditure of the last three sessions have been as follows:—Receipts, £69 18s. 6d.; Expenditure, £68 18s. 6d. The issue of tickets, at 3d. each, for the admission of the labouring classes continues to increase. The committee again acknowledge with thanks the kindness of the Lord President of the Association, in using his powerful influence to obtain so many lectures without any material expense to the Association, and more particularly for the great interest he manifests in the welfare of the Association. The Committee also thank the Ven. Archdeacon Utterson, Vice-President, for the interest he invariably takes in the well-being of the society; and they feel that their warmest acknowledgments are due to those gentlemen who have kindly come to deliver lectures, and also to all the elected officers for the zeal with which they have fulfilled the onerous duties of their respective offices. The state of the funds has varied during the last three years, owing to several causes, and especially that in 1861 no "donations" were received at all equal to those received in 1859 and 1860. The balance sheets from 1859 to 1861 give the following totals—the accounts being made up to the end of December in each year:—1859—Receipts, £103 1s. 4d.; expenditure, £96 11s. 1860—receipts, £141 16s. 1d.; expenditure, £134 14s. 9d. 1861—receipts, £125 15s. 7d.; expenditure, £131 19s. 4d. The Association now numbers 37 honorary members, 126 ordinary members, and 101 lady subscribers.

LONG PRESTON MECHANICS' INSTITUTION.—This place, although an agricultural village, in Craven, containing little more than 500 inhabitants, may boast of having one of the best Institutions in the kingdom in proportion to its population. The building was erected last year, at a cost of about £800, the whole of which was contributed in the neighbourhood; and notwithstanding the Institute was founded ten years since, the first *soirée* was held on Friday last, the 5th September. Mr. John Thompson, who has been indefatigable in his support of the Institute since its commencement, was in the chair, and in his opening address pointed out the many advantages afforded to the locality. They had a library of above 850 volumes, with which two branches for village circulation were con-

nected, a really handsome reading-room supplied with newspapers and magazines, evening classes for elementary well filled by persons of all classes, and the meeting instruction and occasional lectures. The large room was addressed by the Rev. Adam Clarke (a grandson of the celebrated Dr. Adam Clarke), Mr. Barnett Blake, the agent of the Yorkshire Union of Mechanics' Institutes, and other gentlemen, the proceedings being enlivened by the musical exertions of a very efficient choir.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[From Gazette, September 19th, 1862.]

- Dated 12th June, 1862.*
1426. C. J. Neale, High Oakham, Nottinghamshire—Imp. in apparatus for measuring and registering corn and other grain.
- Dated 20th June, 1862.*
1816. J. B. T. Detunco, Quesnoy le Montant, Somme, France—Improved apparatus or machinery for treating flax or hemp.
- Dated 21st June, 1862.*
1835. H. Gonnon, St Nazaire, Loire Inferieure, France—Improved machinery for making bricks.
- Dated 26th June, 1862.*
1878. J. Martin, Rue de Bordeaux, Perigueux, France—Imp. in reaping and mowing machines.
- Dated 21st July, 1862.*
2071. W. E. Gedge, 11, Wellington street, Strand—Improved excavating or boring apparatus. (A com.)
- Dated 28th July, 1862.*
2129. C. W. Eddy, 8, Warwick-terrace, Belgrave-road, Hanover-square—Imp. in the means of impeding the entrance of ships and vessels, and in particular of screw ships, into channels.
- Dated 29th July, 1862.*
2146. J. Mackenzie, Arundel-square, Islington—Imp. in shaping machines for curvilinear surfaces.
- Dated 31st August, 1862.*
2183. R. Nurse, Machen, near Newport, and D. Nurse, Jun., Ponty-mister, Monmouthshire—An improved annealing pot.
2185. C. H. Plevins, Dunstan-hall, Derbyshire, and H. Rider, Rotherham—Yorkshire—Imp. in the construction of colliery waggon, tubs, or corves, and in apparatus for tipping or discharging the same.
- Dated 5th August, 1862.*
2197. J. Higgin, Manchester—An improved substitute for cow dung used in printing and dyeing textile fabrics or yarns.
- Dated 7th August, 1862.*
2212. F. H. M. C. D. C. De Fenis de l'acombe, Paris—Imp. in the means of lighting towns or other localities, and of ventilating, warming, and providing the same with water.
- Dated 9th August, 1862.*
2232. J. J. H. Gebhardt, Lawrence-lane—An improved fastening for purses, pocket books, needle books, ladies' companions, instrument cases, and other similar articles. (A com.)
- Dated 18th August, 1862.*
2317. J. Briere, Brussels—A continuous self-acting condenser, being a new boiler-feeding apparatus.
- Dated 20th August, 1862.*
2327. W. Whittle, Smethwick, Staffordshire—Improved machinery for the manufacture of nails and spikes.
2329. H. Whittaker, Church, near Accrington, Lancashire—Imp. in healds or heddles, and in the manufacture of the same.
- Dated 23rd August, 1862.*
2354. J. Edwards, 77, Aldermanbury—Imp. in the permanent way of railways.
- Dated 26th August, 1862.*
2362. H. R. Hughes, 31, Mottram-street, Stephen-street, Salford, Manchester—Imp. in the construction of sawing machines.
2363. W. E. Gedge, 11, Wellington-street, Strand—Imp. in stays or corsets. (A com.)
2364. J. Harrison and B. Harrison, Otley, Yorkshire—Imp. in clod crushers.
2367. L. Jarosson, La Madelaine, near Lille, France—An improved process and machinery for bleaching or washing textile fabrics and materials.
- Dated 27th August, 1862.*
2375. W. H. Turner, Blackburn—Imp. in machinery or apparatus for carding cotton and other fibrous materials.
2376. W. Clark, 361, City-road—Imp. in tea and other trays for the table, and in urns and apparatus intended to be used therewith.
2377. G. Lindsay, Belfast—An improved mode of arranging and disposing guns in ships employed in naval warfare and otherwise.

2379. R. A. Brooman, 166, Fleet-street—Imp. in machinery for separating or sorting and washing coal and other minerals. (A com.)

2381. J. G. Nutting, Regent-street, Westminster—An imp. in the manufacture of buttons.

2383. H. W. Cook, Norwood, Surrey—Improved apparatus for obtaining motive power, applicable for driving machinery or for other purposes where a motive power is required.

Dated 28th August, 1862.

2385. J. Kitchen, Liverpool—Imp. in ventilators.

2389. J. J. Moeckel, Rouen—Imp. in machinery or apparatus for spinning cotton, wool, and other fibrous materials.

2391. W. Husband, Hayle, Cornwall—Imp. in water valves.

2393. C. Humfrey, Suffolk-grove, Southwark—Imp. in the treatment of petroleum to render it non-inflammable.

Dated 29th August, 1862.

2395. H. Jones, Birmingham—Imp. in breech-loading fire-arms.

2397. W. Smith, 19, Salisbury-street, Adelphi—Imp. in the construction of furnaces. (A com.)

2399. H. Harben, Oxford-villa, Haverstock-hill—Imp. in the manufacture of cotton, cotton fibre, and other similar fibrous productions.

2403. R. Courtenay, Craigton, Kingston, Jamaica—Imp. in obtaining motive power.

2405. E. A. Pontifex, Shoe-lane—Imp. in steam traps, or apparatus for facilitating the escape of condensed steam.

Dated 30th August, 1862.

2407. E. C. Harding and C. Doody, Manchester—Imp. in braces.

2411. J. Meyer, Kennington, Surrey—Imp. in mechanism for the production of Jacquard cards, and in the said cards or card bands.

Dated 1st September, 1862.

2413. J. Nickson and T. Waddington, jun., Manchester—An improved foundation or groundwork for plaster for ceilings, walls, partitions, and other purposes.

2415. W. E. Gedge, 11, Wellington-street, Strand—Imp. in apparatus for washing the felts of paper making machines. (A com.)

2417. J. Whitehead, Newton Moor, Cheshire—Imp. in machinery or apparatus for preparing, spinning, and doubling cotton, wool, and other fibrous materials.

2421. W. Clark, 53, Chancery-lane—Imp. in the means of obtaining light and heat, and in apparatus for the same. (A com.)

2423. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in apparatus for regulating or controlling the working of motive power engines, applicable also to the regulation of the flow of liquid, air, or gas through pipes or conduits. (A com.)

Dated 2nd September, 1862.

2429. R. Waygood, Newington, Surrey—Imp. in steam boilers.

2431. J. B. Thompson, Moreton-place, St. George's square—Imp. in electro-magnetic machines.

2432. Sir W. O. Brooke, Euston-place—Imp. in the construction of submarine telegraphic cables.

2433. A. Johnston, 49, Arlington-street, Woodland-road, Glasgow—Imp. in machinery for pressing cotton and other materials, and in bands for retaining the same in bales.

Dated 3rd September, 1862.

2435. H. Elliott, Birmingham—A new or improved instrument or apparatus for extracting the cases of pin cartridges from breech loading fire arms, and for recapping, recharging, and closing or turning in the said cartridge cases.

2437. C. Walton, Bradford—Imp. in circular box looms.

2439. W. Clark, 53, Chancery-lane—Imp. in musical instruments. (A com.)

2441. R. A. Brooman, 166, Fleet-street—Imp. in tools for boring, and in apparatus for working the same. (A com.)

2442. R. A. Brooman, 166, Fleet-street—Imp. in apparatus for transmitting electric telegraph messages and signals. (A com.)

2443. P. J. Bossard, Kennington-road, Surrey—Imp. in stoppers for bottles, jars, guns, tubes, and other open mouthed articles, in taps, and in fixing them in casks and other vessels. (A com.)

Dated 4th September, 1862.

2445. B. F. Cowan, Victoria Hotel, Euston-square—Imp. in cannon and other fire-arms.

2449. R. P. Coles, Englefield-road, Islington—Imp. in the construction of the permanent way of railways.

Dated 5th September, 1862.

2451. W. Slater, Little Bolton, and W. R. Harris, Salford, Lancashire—Imp. in self-stripping carding engines for preparing cotton and other fibrous substances or materials.

2453. H. W. Hart, Fleet-street—Imp. in argand and other burners.

2454. D. A. Samuel, Belvedere, Kent—Imp. in apparatus for steering vessels.

2455. J. S. Margetson, Cheapside—Imp. in the manufacture of the material intended for scarfs or cravats, and in the machinery employed therein.

2456. W. Wells, Ryder's-court, Leicester-square—Imp. in horse shoes, and in the method of fastening the same.

2457. W. E. Newton, 66, Chancery-lane—Imp. in lamps. (A com.)

2458. S. H. Hadley, City Mills, Upper Thames-street—An improved process for manufacturing gas for illumination.

2459. J. R. Johnson, Stanbrook-cottage, Hammersmith, and J. A. Harrison, 25, St. Andrew's-road, Southwark—Imp. in apparatus for taking photographic panoramic pictures.

Dated 6th September, 1862.

2460. S. H. Huntly, 50, Upper Baker-street, Regent's-park—Imp. in cooking apparatus more particularly applicable to the requirements of the army and navy.

2461. J. Snider, jun., 51, Dorset-street—A new and useful method of increasing the durability of, and for preserving, cloths and other like fabrics used for sails, tarpaulings, tents, and other coverings; also all kinds of ropes, and cables, and telegraph wires; also all woods, metals, and other materials used in buildings or constructions on land or on water; and all objects exposed to the action of acids, alkalis, gases, fire, fresh or salt water, atmospheric or other like destructive influences by the application of graphite.

2462. S. Pudney, 37, Manor-street, Clapham—Imp. in apparatus to be used in the manufacture of sulphuric acid.

2463. H. Hughes, Homerton—An improved frilled and fluted fabric or material, and imp. in fluting or goffering machines.

2464. E. L. Duncan, Inverness-road, Bayswater—Imp. in the manufacture of splints.

2465. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in fire-arms and projectiles. (A com.)

2466. W. J. Curtis, Tufnell park-road, Holloway—An improved construction of breech-loading cannon.

Dated 8th September, 1862.

2468. C. W. Williams, Lancaster—Imp. in steam boilers.

2469. F. D. Artingstall, Manchester—Imp. in balances.

2470. J. S. Crosland, Ashton-under-Lyne—Imp. in the manufacture of tubes made of copper, and of copper combined with other metals.

2475. G. Davies, 1, Serle-street, Lincoln's-inn—Imp. in railway signals. (A com.)

2476. A. J. Alderman, 69, Guildford-street, Bloomsbury—Imp. in ships' windlasses, capstans, and cable stoppers, applicable generally to hauling and working with chains.

Dated 9th September, 1862.

2477. J. Webster, 142, Woodbridge road, Ipswich—Imp. in preventing the incrustation of steam boilers.

2478. Lieut. P. Rainier, R.N., The Cedars, Shirley, near Southampton—Imp. in watches, chronometers, and other timekeepers.

2479. J. Maurice, 3, Langham-place, Regent-street—Imp. in the construction and preservation of ships and vessels.

2480. F. Selby, Surbiton, Surrey—Imp. in traction engines and in valves for traction engines where compound engines are used, which latter imps. are applicable to compound engines generally.

PATENTS SEALED.

[From Gazette, September 19th, 1862.]

September 19th.

767. R. A. Brooman.
768. R. A. Brooman.
769. R. A. Brooman.
770. R. A. Brooman.
775. A. Hill.
777. E. Smith.
778. E. Field.
783. R. Kay.
785. J. Newall.
786. J. M. Hart & R. Lavender.
787. J. Fawcett.
788. J. Humphrys.
789. B. H. Mathew.
793. D. Abercrombie.
795. T. Fontenay.
798. J. Davis.
801. J. H. Tuck.
802. J. G. Jennings.
805. W. Holiday.
806. G. Hartshorne, jun., D. G. Ward, and W. Woolley.
808. J. H. Brierley.
813. B. Fleet.
814. J. Topham.
816. W. Henson.
817. J. Stewart.
821. W. Beaumont & J. W. Edge.

822. A. Fryer.
824. T. Guibal.
828. W. Clissold.
830. L. De la Peyrouse.
833. J. Parker.
835. H. Nunn.
875. I. Morris.
880. W. Paterson.
899. L. B. Schmolle.
908. W. Clark.
923. G. Holcroft.
950. H. T. Hassall and M. Burke.
952. J. C. Kay and W. Hartley.
966. W. E. Newton.
984. E. Welch.
988. J. Watremez and A. Kloth.
1039. H. Holland.
1074. R. A. Brooman.
1147. A. Parkes.
1149. A. Parkes.
1244. W. T. Glidden.
1490. N. Ames.
1663. J. Whitworth.
1757. A. Longbottom.
1839. G. T. Bousfield.
1844. H. Ponsonby.
1967. O. W. Child.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[From Gazette, September 23rd, 1862.]

15th September.

2110. T. Richardson.
2113. J. Luis.
2142. A. Lamb.
2152. R. Davison.

19th September.

2138. A. Manbre.
2139. W. Weld.
2193. T. Sutton.
2213. W. Hartley.
2291. W. Irlam.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[From Gazette, September 23rd, 1862.]

15th September.

2092. J. Lewtas.
2113. G. A. Biddell.

9th September.

2125. W. Pollitt.